5.1 Environmental Information

5.1.1 General

The following 17 subsections of this Amendment Petition (AP) address the various resource areas identified in the California Energy Commission (CEC) Energy Facilities Siting Regulations (Title 20, California Code of Regulations, Section 1704, Appendix B):

5.2 Air Quality

5.3 Biological Resources

5.4 Cultural Resources

5.5 Geologic Hazards and Resources

5.6 Hazardous Materials Handling

5.7 Land Use

5.8 Noise

5.9 Paleontological Resources

5.10 Public Health

5.11 Socioeconomics

5.12 Soils

5.13 Traffic and Transportation

5.14 Transmission Line Safety and Nuisance

5.15 Visual Resources

5.16 Waste Management

5.17 Water Resources

5.18 Worker Safety

For consistency and ease of review, each of these discipline areas is presented in a standardized format under the following subheadings:

- LORS (laws, ordinances, regulations and standards) Compliance (including involved agencies and agency contacts, permit requirements, and permit schedules);
- Affected Environment;
- Environmental Impacts (including construction, operations, and cumulative impacts);
- Mitigation Measures; and

- References.

Because this is an Amendment Petition, the Conditions of Certification adopted by the CEC continue to apply (including modifications to some Conditions that occurred as part of the 2005 amendment to the 2003 CEC Final Decision). For this reason, each discipline section also presents the current Conditions of Certification in that discipline. Where applicable, the Applicant has proposed changes to the Conditions of Certification to reflect the differences between the impacts of the Amended Project compared to those of the originally proposed SSU6 project. Applicant-proposed changes are shown using strikeout for proposed deletions and italics for proposed new/revised text.

The Amended Project relies substantially on the material contained in the original SSU6 project AFC, but also builds upon it. Amended Project environmental sections include sufficient material from the original AFC, particularly in the Affected Environment portions, so that the reader will not have to refer back and forth to both documents to develop an understanding of the context for the Amendment Petition and for the Amended Project itself. As the transmission lines that will connect the Amended Project output to the regional electrical grid already have been licensed by the CEC, and the Amended Project involves no changes to the transmission element of the original project, no additional analysis is provided in the Amendment Petition. Where needed, information concerning the transmission lines is provided in the environmental topical areas for the convenience of the reader.

As needed, the material from the original AFC has been updated to include changes in the Laws, Ordinances, Regulations, and Standards (LORS) since 2002 when the original AFC was prepared. Descriptions of the Affected Environment have been updated to reflect current baseline conditions and changes between the Amended Project and the original SSU6 project (e.g., different well pad and pipeline locations). Of course, revised impact analyses are provided to reflect the differences in the impacts of the original project compared to the Amended Project

For the convenience of the reader, brief summaries highlighting the primary differences between the originally proposed SSU6 project and Amended Project for the affected environment and expected environmental impacts are provided at the beginning of each of the topical areas in Section 5.

5.1.2 Projects Considered in Cumulative Impact Analysis

The following paragraphs identify and briefly summarize the projects that were considered in the cumulative impacts analysis for each of the 17 resource areas. As required under the California Environmental Quality Act of 1970 (CEQA), the impacts of the Project must be considered together with those of other past, present, and reasonably foreseeable future projects in the area that may produce related or cumulative impacts. Because they already exist, past and present projects are inherently part of the environmental baseline or “Affected Environment” and are discussed in detail for each topical area. For purposes of determining the Project’s cumulative impacts, the impacts associated with past and present projects represent the starting point to which impacts from the proposed Project are added, along with impacts from the reasonably foreseeable projects described below. Imperial County Planning and Development Services Department (ICPDSD) staff provided input regarding projects in the general Project vicinity that should be considered as potential cumulative projects (Cabanilla, 2008).

Projects potentially considered for cumulative analysis in the Amendment Petition needed to be substantial in size (e.g., a few homes or a new gas station/convenience store would not be included

unless they were proposed in the immediate Project proximity – and there no such projects). There is no arbitrary size parameter for inclusion as a cumulative project, nor is there an arbitrary distance parameter. The area of interest for potential cumulative projects generally included northwest Imperial County. Most environmental disciplines do not have established distance requirements for analysis, but those that do generally do not go beyond six miles or so. The overriding consideration is whether or not there is a potential adverse cumulative effect in a specific environmental resource area(s).

For inclusion in the cumulative analysis, projects needed to have reached the stage where the permitting process had at least begun, i.e., permit applications filed). Speculative projects or projects that had been placed on indefinite hold were excluded. All types of projects (residential, commercial, industrial, energy, or other), were considered. However, in rural northwest Imperial County, there is limited development activity, and as described below, the only cumulative projects identified that met the criteria for inclusion were other energy projects. Locations of projects considered are depicted in Figure 5.1-1; brief descriptions of the projects considered are provided below.

The Imperial Valley is unique with respect to the management and stewardship of resources, most notably water. All water for use by all users has its source in the Colorado River. The Imperial Irrigation District (IID) and ICPDSD are the two primary entities that manage this resource. In light of the scarcity of water in the Project area, the Amended Project incorporates measures that reduce water use to the greatest extent practicable by, for example, utilizing water condensed from geothermal brine for over 95 percent of its power plant cooling water needs (see Section 2.0, Project Description and Section 5.17, Water Resources).

5.1.2.1 CHAR Hudson Ranch Geothermal Development Project

The proposed Hudson Ranch Geothermal Development Project is located approximately 3.4 miles northeast of the Amended Project plant site, in an unincorporated area of Imperial County southwest of the City of Niland. Hudson Ranch Power I, LLC, a subsidiary or CHAR, LLC, proposes to construct a 49.9-megawatt (MW) geothermal power plant on land owned by Magma Power Company within the Salton Sea Known Geothermal Resource Area (KGRA). The project is commonly referred to as the "CHAR" project. The proposed CHAR plant site is located at the southeast corner of McDonald Road and Davis Road (Regional Water Quality Control Board [RWQCB], Colorado River Basin Region, 2008b).

Hudson Ranch plans to drill up to seven production and injection wells and construct two well pads, a geothermal brine processing facility, a turbine-generator facility using flash steam technology, and a 92-kilovolt transmission line along McDonald Road to the existing IID electrical transmission grid system (ICPDSD, 2007b). The project's Conditional Use Permit (CUP) is in place and Hudson Ranch Power has executed a long-term power sales contract with a utility company. The project is planned to be operational in 2010. The CHAR project is included in the cumulative impact analysis in this AP.

The ICPDSD (2007) found that although the proposed CHAR project could have a significant effect on the environment, there would not be significant effects if mitigation measures were implemented. The ICPDSD's analysis included cumulative as well as project-level impacts. In identifying specific impacts, the ICPDSD found that the CHAR project would have impacts on burrowing owl. In order to mitigate this impact CHAR must coordinate with the U.S. Fish and Wildlife Service and California Department of Fish and Game for any preparation, implementation and monitoring activities deemed necessary for the protection of burrowing owl. The ICPDSD also found that the CHAR project would be located on a geologic unit or soil that is unstable or would become unstable as a result of the project. In order to mitigate this impact, CHAR

must participate in Imperial County's subsidence detection program. The ICPDSD also concluded that the CHAR project would cause increases in traffic, which would be substantial in relation to the existing traffic load and capacity of the street system. In order to mitigate this impact, CHAR was required to prepare a traffic study to review both short-term and long-term traffic and include possible mitigation measures, subject to review and approval by the ICPDSD; as of early January 2009, this study had not yet been approved by the County or released to the public. At a minimum, full road improvements along the project frontage on all county roads must be provided for safety and dust suppression. The ICPDSD determined that the CHAR project would have no impact or less than significant impacts on the other environmental resources analyzed. The ICPDSD analysis included cumulative as well as project-level impacts but did not mention the SSU6 project.

5.1.2.2 City of Calipatria Annexation for Housing Development Project

According to the City of Calipatria, there has been an annexation application for a proposed housing development on 70 acres located at the southwest corner of Lyerly Road and West Eddins Road, adjacent to the west of the current incorporated limits of the City of Calipatria. The proposed development site is approximately 6.1 miles from the Amended Project plant site. According to Calipatria City Manager Rom Medina, the development project currently has been placed on hold by its proponents due to the poor housing market (Medina, 2008). To date, no environmental impact analysis has been conducted for the proposed housing development. Because of the uncertainties surrounding the project and its future, this speculative project is not considered in the cumulative impact analyses conducted for this Amendment Petition.

5.1.2.3 Los Angeles Department of Water & Power (LADWP) Solar Energy Project

The Los Angeles Department of Water and Power (LADWP) proposes to develop the Niland Solar Energy Project (LADWP solar project), a 68-MW photovoltaic power project located on approximately 970 acres of LADWP-owned land in Niland. It is proposed approximately 8.0 miles northeast of the Amended Project plant site. OptiSolar, Inc. of Hayward, California is the solar energy developer selected to assist LADWP with the design, development, construction, and initial operation of the project. The LADWP solar project is expected to be fully operational by the end of 2010 (LADWP, 2008). The LADWP solar project is included in the cumulative impact analysis in this AP.

Solar facility construction would proceed in four stages beginning in mid-2010, each taking one to two months to complete. The peak construction workforce is estimated to be 100 to 150 workers. The LADWP project is expected to be in operation for a period of 30 years or more with a minimal work force (~10 workers). Water consumption would require up to 4.5 acre-feet of water annually for solar panel washing. The project would not generate industrial wastes or toxic substances during operation (LADWP, 2008).

The ICPDSD (2008b) filed a CEQA Initial Study/Mitigated Negative Declaration in November 2008, which found that all significant environmental impacts could be mitigated. Mitigation measures are required by the ICPDSD for impacts to aesthetics (glare); biological resources (impacts to burrowing owl, loggerhead shrike, raptor species, bat species, jurisdictional waters, and native vegetation); cultural resources (archeological and paleontological resources); geology and soils (geotechnical constraints); hydrology and water quality (jurisdictional waters, drainage controls); and utilities and service systems (waste disposal).

5.1.2.4 Ormat Geothermal Projects

North Brawley Geothermal Project

The North Brawley Geothermal Project (North Brawley), operated by Ormat Nevada, Inc. (Ormat), is located approximately 11.2 miles southeast of the Amended Project plant site, in an unincorporated area of the County north of Brawley. Ormat is developing a 49.9-MW binary power plant, including 20 to 26 production wells and 14 to 20 injection wells (total maximum of 40 wells), in the North Brawley KGRA (RWQCB, Colorado River Basin Region, 2008a). The North Brawley project will also include a substation and an approximately 250-foot-long transmission line interconnection. The power plant will be designed as a zero discharge facility. All wastewaters generated within the facility will be reinjected into the geothermal resource (RWQCB, Colorado River Basin Region, 2008a). The project will begin operation by early 2009. In part because of the distance between the North Brawley project and the Amended Project sites (over 11 miles), and because there is no construction timing overlap (the Amended Project is scheduled to begin construction in 2010), there is minimal potential for significant cumulative effects between the two projects. The Ormat project documents reviewed did not discuss potential cumulative effects for that project together with the SSU6 project

East Brawley Geothermal Project

Ormat also plans to develop a 49.9-MW geothermal power plant in their East Brawley field, located to the east and across the New River from the North Brawley field (Ormat Nevada Inc., 2008). The proposed East Brawley plant would be located near the intersection of Ward Road and Best Road, approximately 11.8 miles southeast of the Amended Project plant site. Ormat is currently drilling six exploration wells in the East Brawley field. The firm has submitted an application for a CUP to the ICPDSD to construct the power plant, approximately 60 wells (approximately half each for production and injection), and associated pipelines for the East Brawley project. The CUP application is currently under review by the Imperial County Environmental Evaluation Committee. The East Brawley plant would use the same technology as the North Brawley plant and would be designed as a zero discharge facility. The project also will include a substation and an approximately two-mile-long transmission line interconnection between the East Brawley plant and North Brawley substation. Completion of the project is scheduled for the end of 2009. Because of the distance between the North Brawley project and the Amended Project sites (over 11 miles), and no overlap in construction timing (completion of East Brawley in 2009 with Amended Project construction not beginning until 2010), there is minimal potential for significant cumulative effects between the two projects.

5.1.3 References

Cabanilla, Richard, 2008a. Imperial County Planning and Development Services Department (ICPSD). Personal communication with Stephanie Hsia and Arrie Bachrach, AECOM August and December 2008.

ICPDSD, 2008b. Mitigated Negative Declaration for Conditional Use Permit #08-0027 LADW&P/OptiSolar Power Plant and Facilities/68 MW).

ICPDSD, 2007. Project Report. CUP#07-0019 Relocation of the Hudson Ranch Power I LLC (Amending CUP #06-0047). October 10.

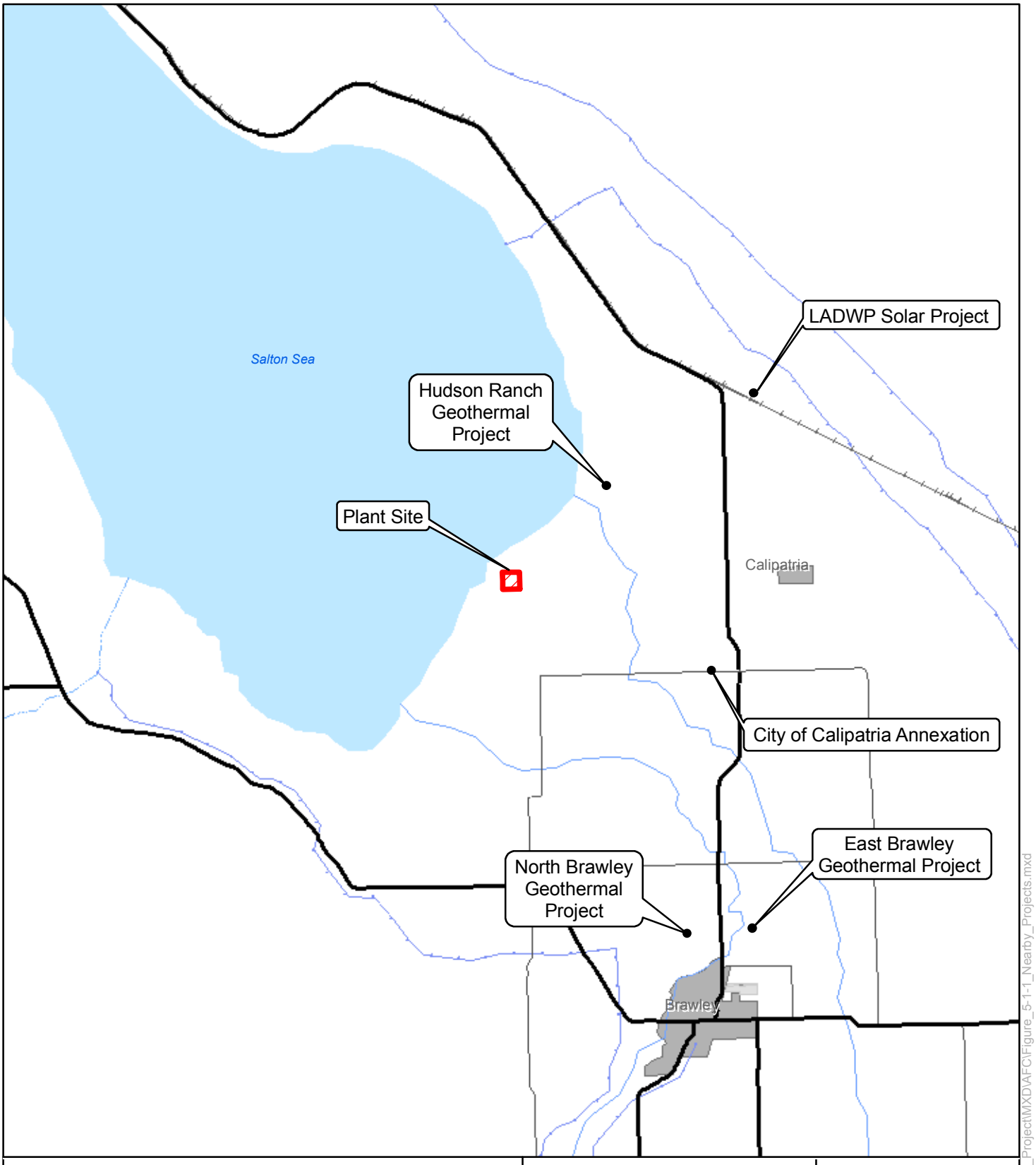
Los Angeles Department of Water and Power (LADWP), 2008. Niland Solar Energy Project Description. Handout circulated at Imperial County Environmental Evaluation Committee meeting, November 13.

Medina, Rom, 2008. City Manager, City of Calipatria. Personal Communication with Justin Westrum, ENSR. November 5.

Ormat Nevada, Inc., 2008. Application for Conditional Use Permit #08-0023 East Brawley Geothermal Project.

Regional Water Quality Control Board (RWQCB), Colorado River Basin Region, 2008a. Order No. R7-2008-0004. Waste Discharge Requirements (Revision 1) for Orni 17, LLC, Well Field Owner, Orni 19, LLC, Power Plant Owner, Ormat Nevada Inc., Facility Operator, North Brawley Geothermal Project, Wellfield Mud Sumps/Containment Basins, North Brawley Known Geothermal Resource Area (KGRA) – Imperial County.

Regional Water Quality Control Board (RWQCB), Colorado River Basin Region, 2008b. Order No. R7-2008-0063. Waste Discharge Requirements for Hudson Ranch Power I, LLC, Owner, Hudson Ranch Geothermal Development Project, Proposed Geothermal Power Plant, Salton Sea Known Geothermal Resource Area (KGRA) - Imperial County.



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Amended SSU6 Project
Figure 5.1-1
Potential Cumulative Projects

1:250,000

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CE GENERATION LLC
A MIDAMERICAN ENERGY HOLDINGS COMPANY AFFILIATE

AECOM

Project: 12676-001
Date: February 2009

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